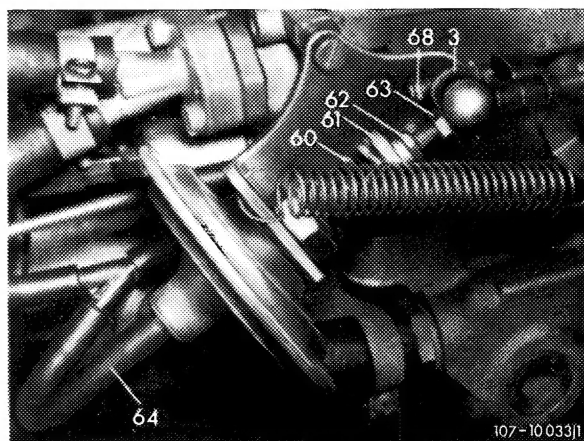


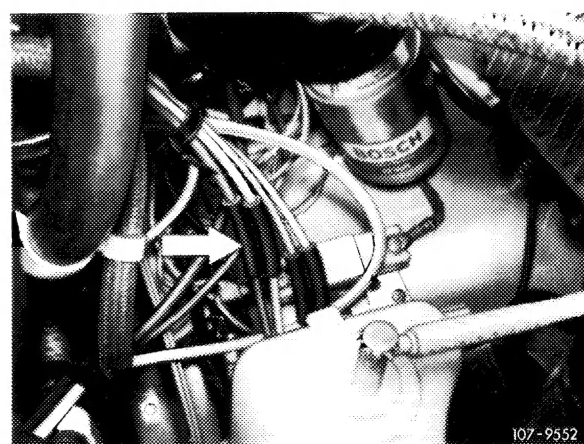
1 Adjusting nut

- Connect revolution counter and CO measuring instrument. For connection of revolution counter refer to job. no. 781.
- Check whether on vehicles with cruise control the Bowden wire is resting free of tension against regulating lever. Adjust Bowden wire by means of adjusting nut, if required.
- Run engine up to at least 60–80°C (140–176°F) oil temperature.



68 Idle speed adjusting screw

- Check idle speed and adjust to specified speed by means of idle speed adjusting screw (68) if required.



- Check idle speed emission value and adjust, if required.

For this purpose, **with California emission control model year 1974**, pull-off **red** vacuum line at connecting point (arrow) (air injection inoperative).

From **model year 1975/76**, pull-off **blue/violet** vacuum line at connecting point (arrow) (air injection inoperative).

Turn both mixture regulating screws (arrows) to the right against stop, then turn both uniformly to the left and adjust specified emission value.

Turn to left = leaner

Turn to right = richer

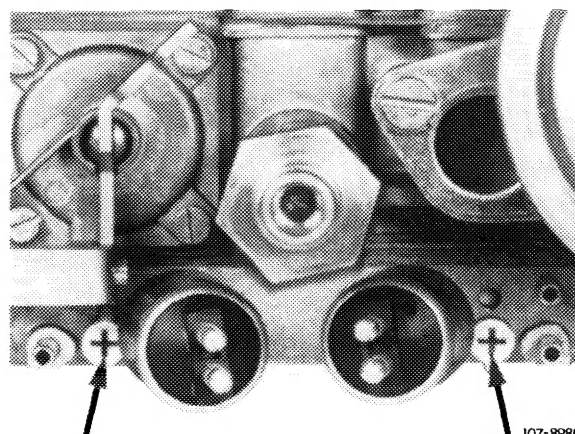
- Accelerate for a short moment, check speed and emission value once again and adjust, if required.

After checking or adjusting idle speed emission value, plug vacuum lines together again.

With California emission control model year 1974, check idle speed emission value once again (air injection operative).

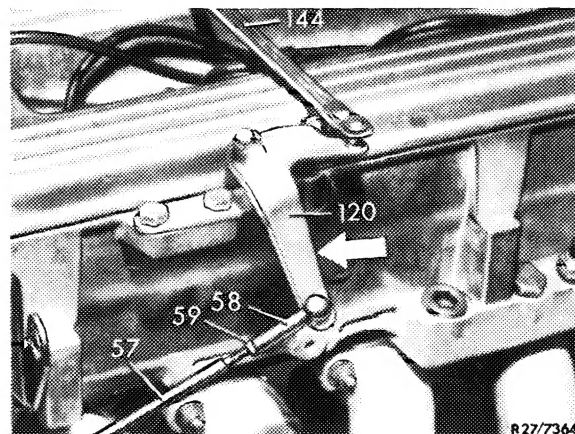
- Adjusting regulating linkage

Run engine at idle speed. Disconnect control push rod (57) of automatic transmission. Telescope connecting rod (140) and push angle lever (120) toward the rear (arrow). Then push control push rod also toward the rear, attach ball socket (58) free of tension and adjust, if required.



107-8980

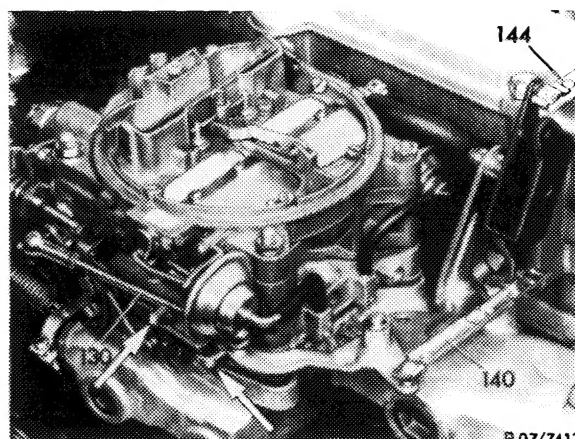
Mixture regulating screws



R27/7364

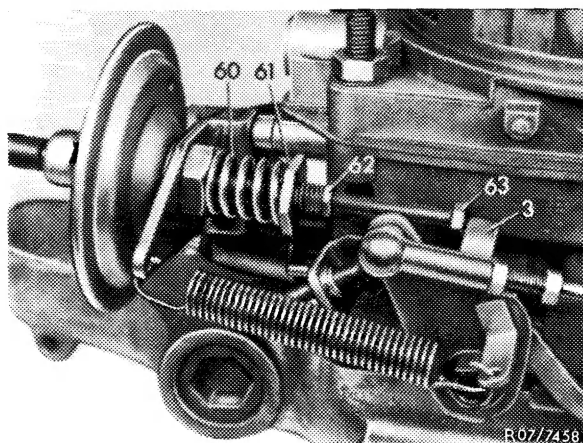
57 Control push rod
58 Ball socket

120 Angle lever



R07/7413

140 Connecting rod



3 Throttle valve lever
60 Compression spring
61 Adjusting nut

62 Counter nut
63 Adjusting screw

Adjusting vacuum governor

- Run engine at idle speed. Pull-off vacuum hose on regulator, then adjust to specified speed with adjusting screw (63) and reattach vacuum hose.

Attention!

Apply counterhold to diaphragm rod when loosening counter nut (62).

Engage driving position and check specified speed. Set compression spring to this speed by means of adjusting nut (61), if required. Then turn power steering to full lock, engage air-conditioning system, keep engine perfectly running. Adjust speed once again with adjusting nut, if required.

Test values

Adjust engines according to data on pertinent emission reference plate.

Model year	Idle speed 1/min	Emission values at idle % CO
1972	750–850	2.0–3.5
1973		max. 1.5
1974	800–900	
1975/76		0.4–1.5 without air injection
starting 1977	850	0.4–2.0 with air injection

Vacuum governor adjusting data¹⁾

Engine speed vacuum hose pulled-off		Distance throttle valve lever — adjusting screw
1972 1/min	Starting 1973 1/min	mm
1.600–1.700	1.200–1.400	approx. 0.1

¹⁾ Engine should still run perfectly when all supplementary units are added.

Special tool

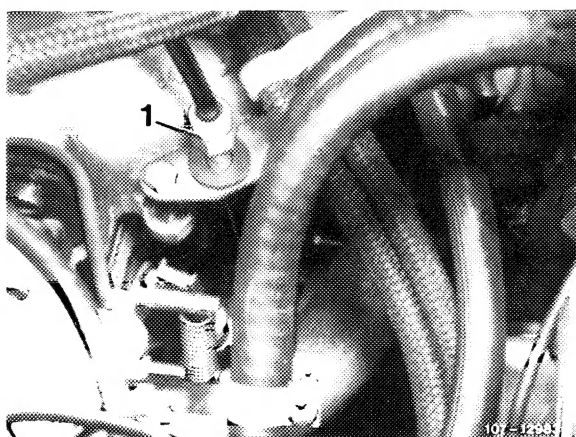
Oil tele-thermometer



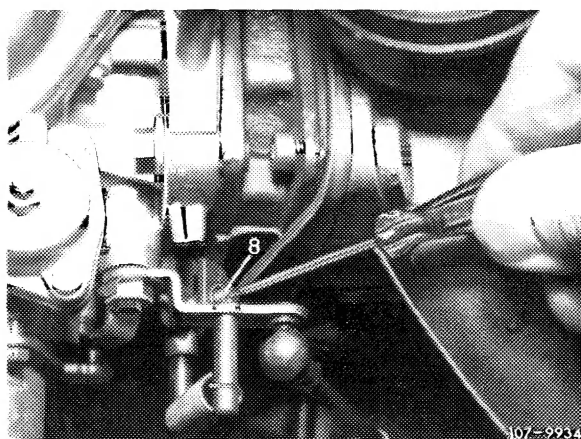
116 589 27 21 00

Conventional tools

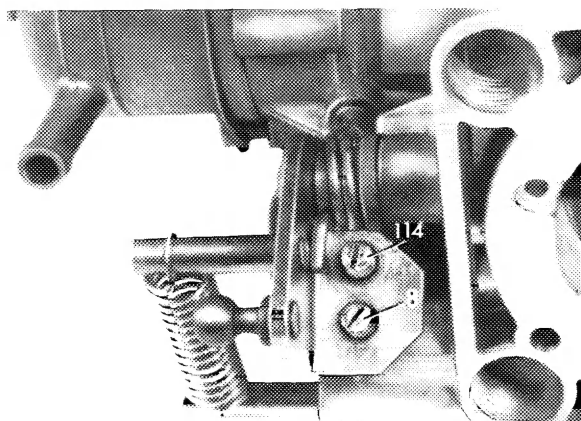
Tachometer CO measuring instrument



1 Adjusting screw for cruise control cable



8 Idle speed adjusting screw up to and including model year 1974



8 Idle speed adjusting screw for model year 1975/76

- Connect tachometer and CO measuring instrument. For connecting tachometer, refer to job no. 781.
- Switch-off air-conditioner.
- Switch-off righthand vehicle heater and run engine up to an oil temperature of 60–80°C (140–176°F).
- Check whether cable rests on throttle lever **free of tension**. If required adjust cable with adjusting nut (1).

• Check idle speed and adjust, if required.

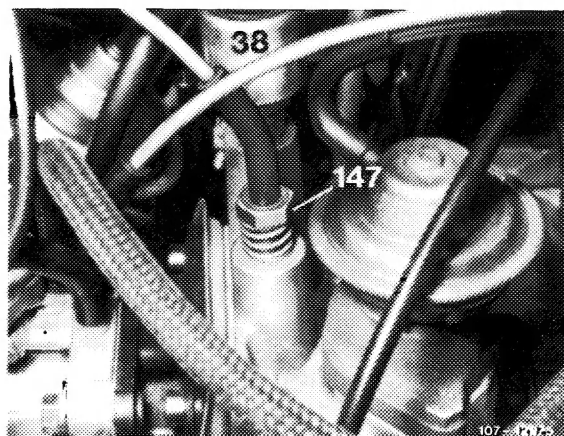
Up to and including model year 1974.
Adjust idle speed with adjusting screw (8).

Model year 1975/76

Adjust idle speed with adjusting screw (8).

Starting with model year 1977

Adjust idle speed with adjusting screw (147).

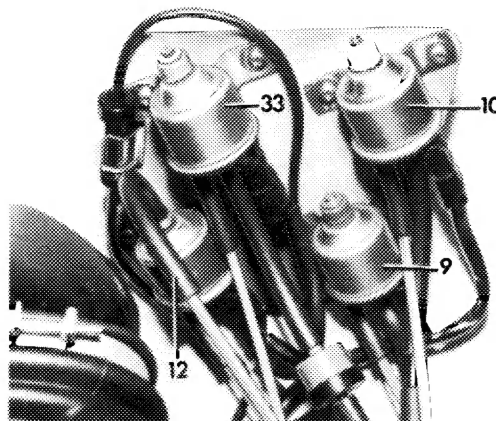


147 Idle speed adjusting screw starting with model year 1977

• Check idle speed CO level

Model year 1975/76

Check idle speed CO level without air injection. For this purpose disconnect center line on blue switch-over valve (33) and plug it. This stops air injection:

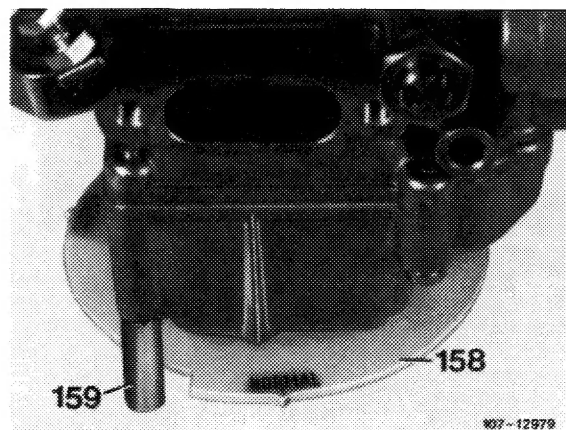


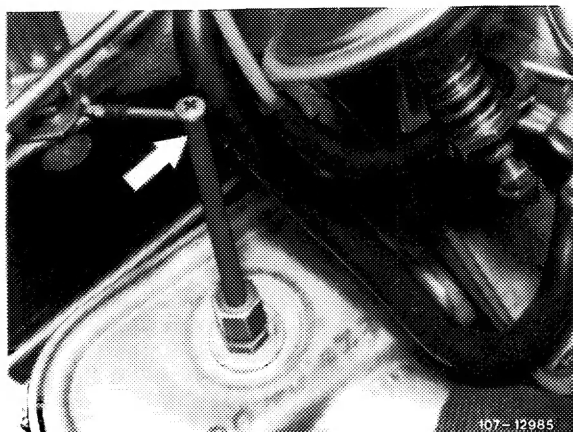
33 Switch-over valve air injection (blue)

Starting with model year 1977

On models of federal version check, whether hand-wheel for altitude adjustment is at proper mark. Adjust if necessary.

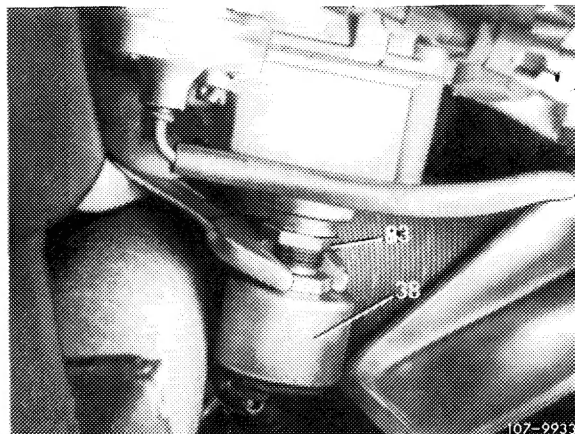
Normal = 4000 ft. or lower
4000 ft. = above 4000 ft. (high altitude)





Arrow = Exhaust gas tapping
pipe for idle CO test

Connect CO tester. For this purpose remove plug in exhaust gas tapping pipe and connect CO tester by way of hose.

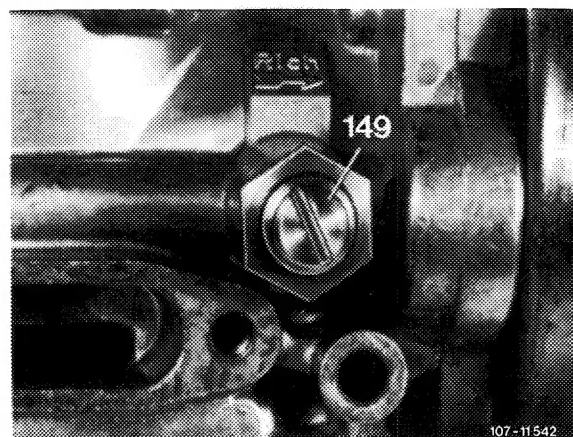


38 Idle speed shutoff valve
83 Hex. nut

- **Adjust idle speed CO level**

Up to and including model year 1976

Adjust idle speed CO level with idle speed shut-off valve (38).



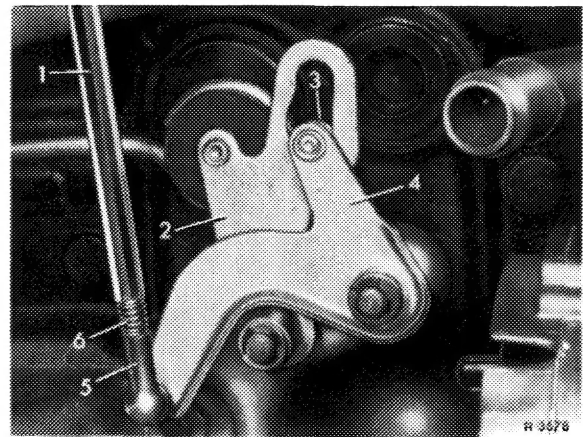
149 Idle air adjusting screw for idle speed CO level
adjustment starting with model year 1977

Starting with model year 1977

Adjust idle speed CO level with adjusting screw (149).

• Adjusting regulating linkage

On vehicles with manual transmission, adjust regulating rod (1) in such a manner that roller (3) in gate lever (2) rests free of tension in end stop.

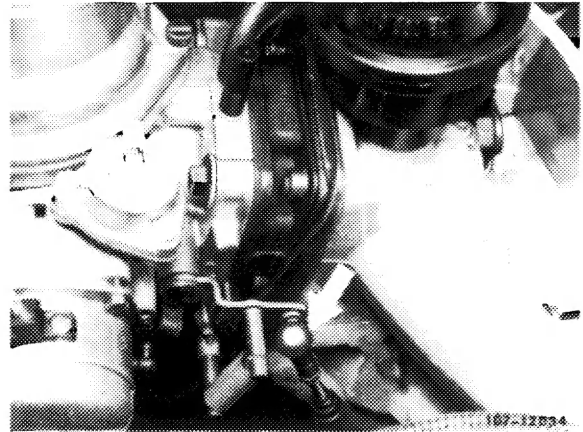


1 Regulating rod
2 Gate lever

3 Roller

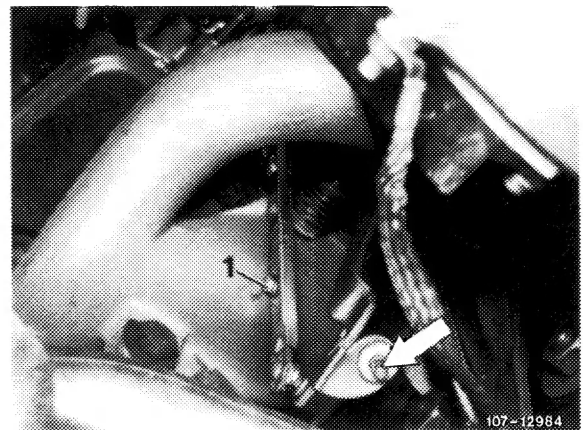
On vehicles with automatic transmission, adjust regulating rod (1) at idle speed in such a manner that regulating rod can be attached free of tension when fully extended (idle travel).

Note: On vehicles with California emission control as from model year 1975/76, the idle path of the regulating rod is eliminated.



1 Regulating rod

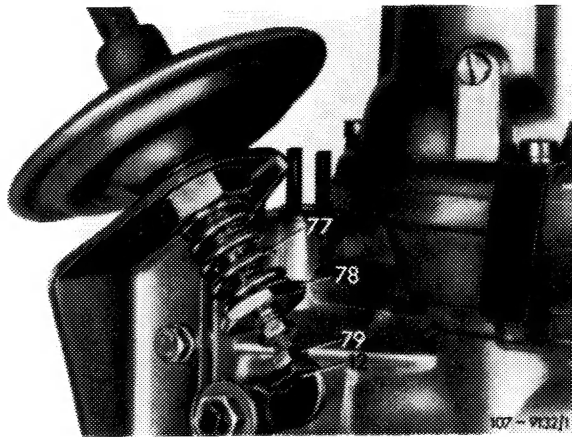
Loosen clamping screw (1) to adjust regulating rod starting with model year 1977.



Starting with model year 1977

1 Clamping screw for longitudinal adjustment of regulating rod

Arrow = Cruise control cable



12 Throttle valve lever
77 Pressure spring

78 Adjusting nut
79 Adjusting screw

- **Adjust vacuum governor**

Run engine at idle speed, pull-off vacuum hose on governor and adjust by means of adjusting screw (79) to specified speed.

Attention!

Apply counterhold to diaphragm rod when loosening counter nut.

Reattach vacuum hose to governor.

Check whether clearance between adjusting screw (79) and throttle valve lever (12) amounts to approx. 0.1 mm. Adjust by means of adjusting nut (78), if required.

Engage driving position, turn power steering to full lock and switch on air-conditioning system. Engine should run perfectly and idle speed emission value should be within tolerance.

Adjust speed, if required, by means of adjusting nut (78) and adjust emission value by means of idle speed shutoff valve.

Then disengage driving position and switch-off supplementary units, idle speed emission value should not be outside tolerance.

Engines 116 117 with electronic injection system
Model year 1970-1975

Testing values

The engines should be adjusted according to data of respective emission control information plate.

Engine	Model year	Idle speed 1/min	Idle speed emission value % CO
117.982/984	1972/73	700–800	0.5–2.0
117.982/983 Federal- emission control (black name plate)	1974		
117.982/983 California emission control (green name plate)	1974		max. 1.0 with air injection
117.982/983	1975		max. 1.5 without air injection

Special tool

Oil telethermometer

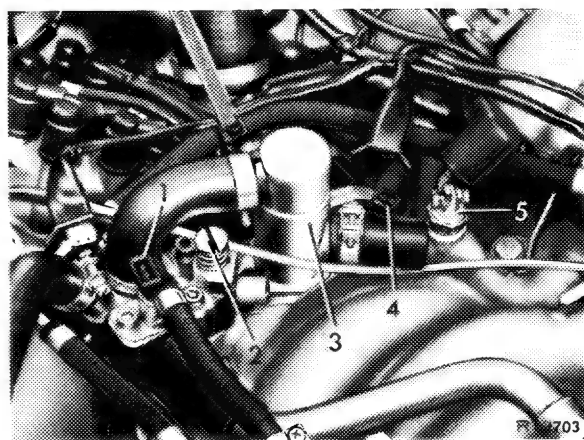
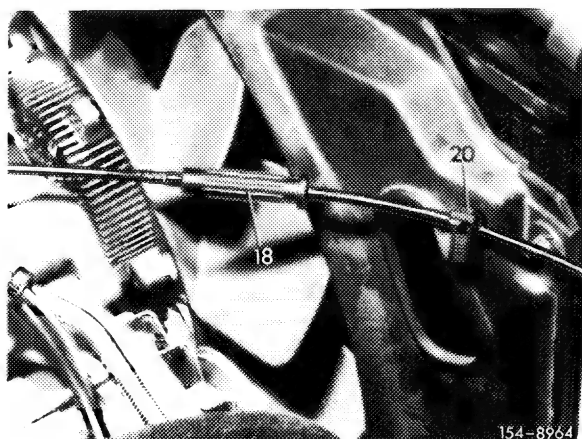


116 589 27 21 00

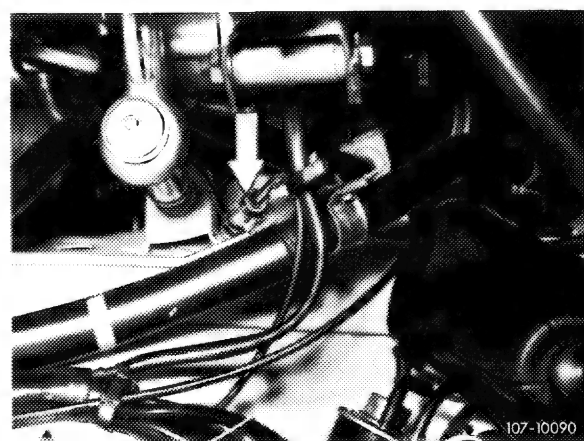
Conventional tools

Tachometer CO measuring instrument





2 Idle speed air screw



- Connect tachometer and CO measuring instrument; for vehicles with transistorized ignition (refer to job no. 781).
- Switch off air conditioner. Move selector lever into position "P".
- Check whether on vehicles with cruise control the Bowden wire rests free of tension against regulating lever. Adjust Bowden wire with adjusting nut, if required.
- Run engine up to 60–80°C (104–176°F) oil temperature.
- Check idle speed and adjust to specified speed by means of idle speed air screw (2 or arrow), if required.

• Check idle speed emission value

On vehicles of model year 1975 check emission value **without** air injection and adjust, if required.

For this purpose, pull off plug connection (arrow) of 17°C (62°F) oil temperature switch at right-hand wheel house and connect to ground. This will stop the air injection.

● Adjust idle speed emission value

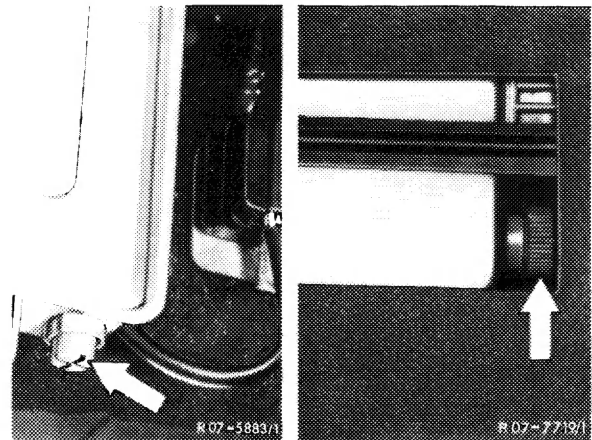
Adjust to specified emission value with adjusting screw on control unit (arrow).

turning counter-clockwise = leaner
turning clockwise = richer

Note: On model 107, the control unit is accessible after loosening inner lining under glove box.

On model 116, the control unit is mounted at right front in leg room. The adjusting screw is accessible upon removal of ornamental moulding.

Accelerate for a short moment, check speed and emission value once again and adjust, if required.

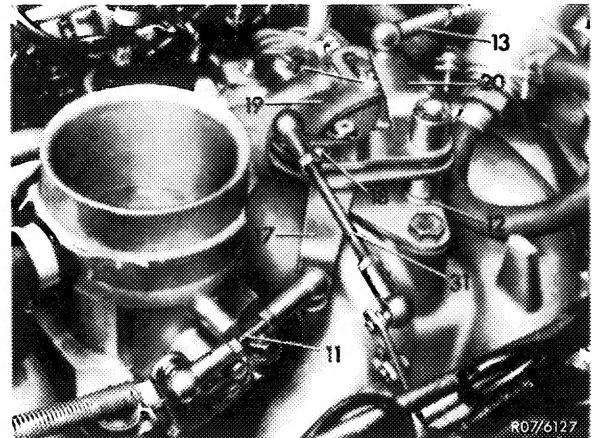


On vehicles of model year 1975, join plug connection of 17°C (62°F) temperature switch.
Check idle speed emission value once again (air injection operative). The idle speed emission value should be below the previously adjusted value.

● Adjust regulating linkage

On vehicles with gate lever (19), adjust regulating rod (11) in such a manner that the roller (7) in gate lever rests free of tension against end stop.

Move selector lever into driving position (automatic transmission), switch on air conditioner, turn power steering to full lock, with engine running smoothly. Adjust speed, if required.



Engine 130
with Zenith Carburetor

Test values

Adjust engines according to data of pertinent emission reference plate.

	Idle speed 1/min	Emission values at idle % CO
Model year 1972	800–900	1.0–1.5

Vacuum governor adjusting values¹⁾

Engine speed	vacuum hose pulled-off	1/min	1.200–1.400
Distance throttle valve lever — adjusting screw		mm	approx. 0.1

¹⁾ Engine should still run perfectly when all supplementary units are added.

Special tool

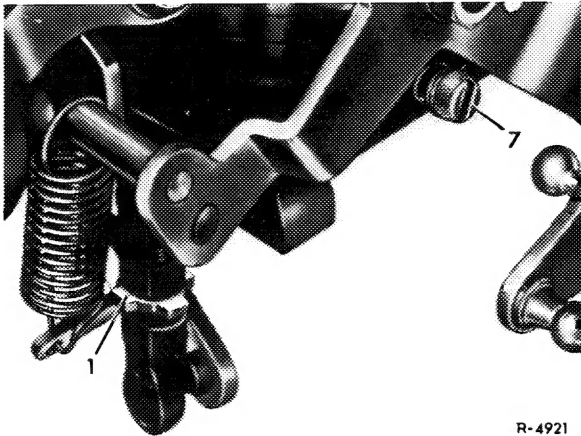
Oil tele-thermometer



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Conventional tools

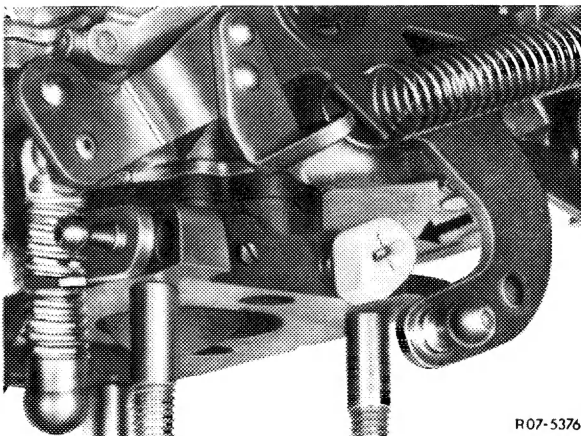
Tachometer CO measuring instrument



R-4921

1 Idle speed adjusting screw

- Connect tachometer and CO measuring instrument. For connecting tachometer, refer to job no.781.
- Check idle speed and emission value and adjust as follows, if required:
- Adjust specified speed simultaneously on both carburetors by means of idle speed adjusting screws (1).



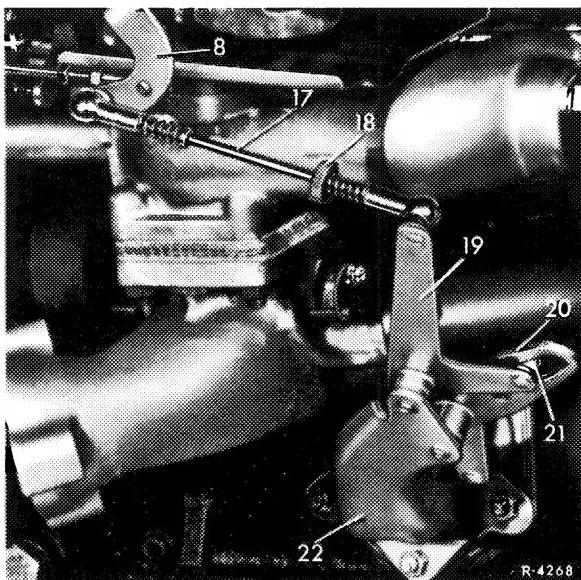
R07-5376

- Turn both mixture regulating screws (arrow) clockwise against stop, then turn uniformly counter-clockwise and adjust specified emission value.

Turn to left = leaner

Turn to right = richer

- Accelerate for a short moment, check speed and emission value once again and adjust, if required.



R-4268

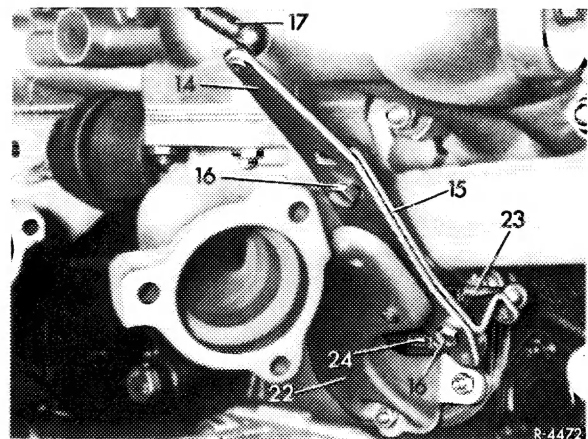
17 Regulating
20 Gate lever

21 Roller

Adjusting regulating linkage

- On vehicles with **manual transmission**, adjust regulating rod (17) in such a manner that roller (21) in gate lever (20) rests free of tension against end stop.

- On vehicles with **automatic transmission** adjust regulator rod (17) with the engine running in such a manner that regulating rod can be attached free of tension when fully extended.

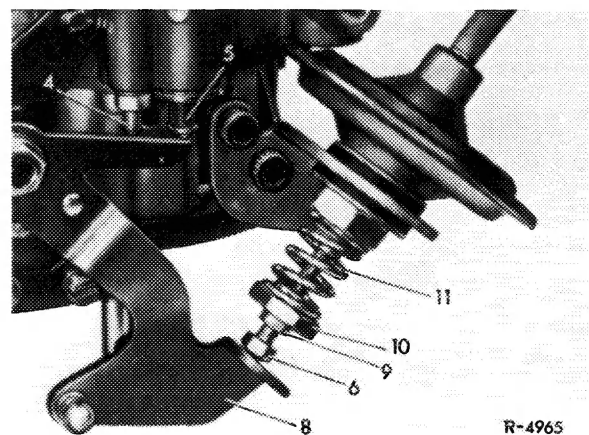


Adjusting vacuum governor

- Run engine at idle speed and pull-off vacuum hose of vacuum governor. Set to specified speed by means of adjusting screw (6). Reattach vacuum hose.

Attention! Loosen counter nut (9) prior to setting adjusting screw (6). For this purpose, apply counterhold to machined flats of diaphragm rod by means of an open end wrench.

- At idle speed of engine, adjust pressure spring (11) by means of adjusting nut (10) in such a manner that clearance between adjusting screw (6) and throttle valve lever (8) is approx. 0.1 mm.
- Place selector lever into driving position (automatic transmission), switch on air-conditioning system, turn power steering to full lock while keeping the engine running. Adjust speed, if required.



- | | |
|-------------------------------|--------------------|
| 5 Float housing venting valve | 9 Counter nut |
| 6 Adjusting screw | 10 Adjusting nut |
| 8 Throttle valve lever | 11 Pressure spring |